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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/973,287  
Filing Date: October 05, 2001  
Appellant(s): PARCHAMAZAD, IRAJ

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Patrick F. Bright  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/9/09 appealing from the Office action mailed 1/11/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Applicants mention of the objection to claims 1-4 is not under appeal as it is a non-appealable issue.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fischer et al. (USP 3,718,506).**

**Regarding claim 1,** Fischer et al., in Fig. 2, discloses a reformer comprising:

a cylinder (13) comprising catalyst with a cap at each end (Fig. 2);

a fuel tube (3') having an outflow end coupled to said cylinder for introducing a hydrocarbon gas into one end of said cylinder (13);

a steam tube (3a') coaxial with and surrounding said fuel tube (3') for concurrently introducing said hydrocarbon gas and steam at said one end of said cylinder (13), said steam tube (3a') having a tip at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, said fuel tube (3') having a substantially open end coincident with and smaller diameter than said steam tube diameter (Fig. 2);

an outflow tube protruding outwardly from said cylinder at an end of said cylinder opposite of said one end (Fig. 2);

said steam tube being formed and to draw said hydrocarbon gas into mixture with said steam, and to direct said steam in a path that is at an acute angle with the path of said fuel outflow, said fuel flow path lying substantially along the axis of said coaxial fuel and steam tubes, and that crosses said fuel path at an acute angle from all radial directions (Fig. 2).

Fischer et al., (in Fig. 2 and C5/L20-23) teaches catalyst bed that appears to be the same as, or an obvious variant of the loosely packed palletized catalyst bed set forth in the instant claim.

**Regarding claims 2 and 4,** Fischer et al., in Fig. 2, discloses all of the claim limitations as set forth above. Additionally the reference discloses the reformer wherein:

- said fuel tube (3') has a tip of given length at its outflow end that is reduced in diameter gradually along said given length (Fig. 2);
- said reformer comprising a heat source (10') around said cylinder (13) for heating said catalyst.

**Regarding claim 3,** Fischer et al., in Fig. 2, discloses all of the claim limitations as set forth above. Additionally, the reference discloses the reformer wherein said hydrocarbon gas is propane (C3/L52-53). While the reference does not explicitly disclose that said propane is stored as liquid in a container, since propane is customarily stored and transported in liquid form, a presence of said container for storing liquefied propane is inherent in the apparatus of Fischer et al.

Regarding limitations recited in claims 1-4 which are directed to a manner of operating disclosed reformer, the examiner notes that neither the manner of operating a disclosed device nor material or article worked upon further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115.

**(10) Response to Argument**

On page 5, Appellant argues that Fisher does not teach a fuel tube or a steam tube that have a number of claimed features, such as:

- a steam tube coaxial with and surrounding a fuel tube; and
- the steam tube having a tip at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, and the fuel tube having a substantially open end coincident with.

The examiner respectfully disagrees with this argument. As can clearly be seen in Fig. 2 there is a steam tube (3a') coaxial with and surrounding said fuel tube (3') and as can clearly be seen in Fig. 2, steam tube (3a') has a tip at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, said fuel tube (3') having a substantially open end coincident with and smaller diameter than said steam tube diameter (Fig. 2).

On page 5, final paragraph and continuing on to page 6, Appellant argues that Fisher does not disclose that steam in tube 3a' is drawn into the path of the hydrocarbon fuel flow from tube 3' at an acute angle from all radial directions.

The examiner respectfully disagrees. As can be seen in Fig. 2, the angle of impingement of the two streams (from tubes 3' and 3a') is clearly acute and would be so from any radial direction.

Furthermore, Appellant states that there is no basis for asserting inherent disclosure of the claimed feature of fluid in tube 3a' is drawn into the path of the fluid from 3'.

The examiner respectfully disagrees with this argument. Fisher explicitly states this feature (col. 3 line 66 - col. 4 line 3) which states:

“...a portion of the gas mixture flowing through pipe 5 is delivered into an annular duct arrangement 3a surrounding the nozzle 3 where it is drawn, i.e. aspirated, into the fuel cell 4 along with fresh fuel gas discharged from nozzle 3, in accordance with the jet pump principle.”

This jet pump principle is precisely the feature which applicant refers to in the claim and argues that Fisher does not teach.

On page 6 final paragraph, Appellant argues that Fisher does not teach that the fuel tube has a given length at its outflow end that is reduced in diameter gradually along that given length. Appellant goes on to state that Fisher states nothing about the structure of fuel nozzle 3’.

The examiner respectfully disagrees with this argument. Fisher has illustrated the nozzle in Fig. 2 which teaches the claimed feature of a fuel tube (3’) that has a tip of given length at its outflow end that is reduced in diameter gradually along that given length. As such, Fisher has indeed disclosed a fuel tube that has a given length at its outflow end that is reduced in diameter gradually along that given length.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/M J M/

/Matthew Merkling/

Examiner, Art Unit 1795      4/6/09

Art Unit: 1795

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QAS, TC1700